

The Invasive Species Times

LEK vs. USGS:

Comparing information from fishermen with government-collected data regarding the range of an invasive species of fish, northern snakehead (*Channa argus*), in the Philadelphia region

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Introduction

- Invasive species can harm the balance of the food chain (1).
- The federal government attempts to document the spread of invasive species. For example, the United States Geological Survey (USGS) maintains the web-based Nonindigenous Aquatic Species (NAS) information source. But invasive species can proliferate at a faster rate than the government can track (2, 3).
- Local ecological knowledge (LEK), knowledge about a natural resource from people who live or work outside, is an alternative strategy for tracking invasive species, using information from fishermen who are out there every day (3).

Background

- Northern snakehead (*Channa argus*) are aggressive predatory fish indigenous to Asia (5, 6).
- Snakeheads survive well out of water and are reputed to “walk” on land, which allows them to spread quickly between bodies of water (7).
- Snakeheads were first spotted in the Chesapeake in 2002, and in Philadelphia in 2004 (6, 8).

Methods

- Interviewed eight fishermen from the greater Philadelphia about where they have caught snakehead.
- Mapped out reported snakehead locations based on interviewee responses.
- Compared interview data with USGS data.

References

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Figures 1a-c: Snakehead fish (*Channa argus*)
Photo credit: fishwild.ut.edu, ianecapital.streerwe.co, USGS NAS

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Results

- Three of our interviewees reported catching snakehead in six locations in Philadelphia and nearby New Jersey.
- The USGS NAS map included reports of snakehead in eleven different locations in the same area.
- Five of the interview report locations corresponded with locations reported by USGS; two were in locations not documented in the USGS data.

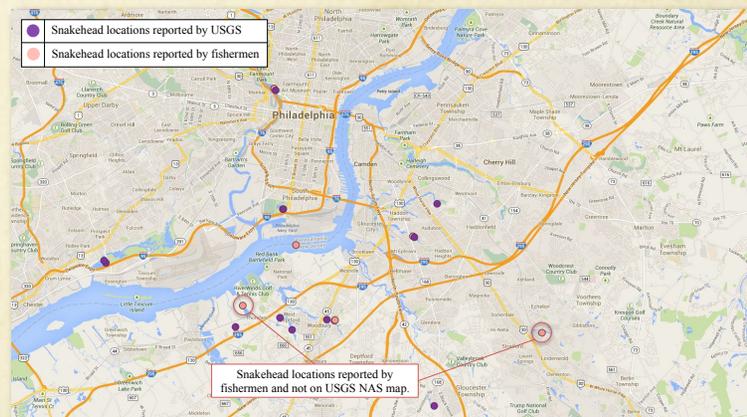


Figure 2: Map of Philadelphia region showing snakehead reports from fishermen interviews (pink dots) and the USGS NAS web site (purple dots).

Discussion

- LEK can provide more information on the range of invasive species than verified government data.
- However, data from the fishermen may be less reliable than the results found by the USGS because the information is not verified.
- The LEK can provide government with useful starting point for where to look for invasive species.